Parmelia subcœrulea. Wilson, sp. nov. Parmelia albata. Wilson, sp. nov. Parmelia tiliacea. Acharius; var. concentrica, Leight Parmelia Kamtschadalis. Eschw. Pamelia colpodes. Acharius; var. sphæroidispora, Wilson Theloschistes velifer. Wilson, sp. nov. Physcia astroidea. Clemente Physcia confluens. Fries. Physcia nodosa. Wilson, sp. nov. Psoroma biatorinum. Wilson, sp. nov. Psoroma contortulum. Wilson, sp. nov. Psoroma lineare. Wilson, sp. nov. Pannaria molybdodes. Wilson, sp. nov. Pannaria cheirolepis. Wilson, sp. nov. Pannaria parmeliæ. Wilson, sp. nov. Pannaria thraustolepis. Wilson, sp. nov. Amphiloma lanuginosum. Acharius Biatora botyriza. Nyl. Lecidea myriocarpa Platygrapha albo-vestita. Knight Arthonia pardalis. Wilson, sp. nov. Chiodecton encephalodes. Wilson, sp. nov. Trypethelium subumblicatum. Knight.

A DESCRIPTION OF FORTY-ONE VICTORIAN LICHENS NEW TO SCIENCE.

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1. Collema congestum. Wilson, spec. nov.

Thallus small (to I in. diam.), black, cartilaginous, difformilobate; lobes roundish, margin elevated, thickened, crenate. Apothecia somewhat large (to 2 mm. diam.), crowded together and covering the centre of the thallus, pallidly or obscurely rufous or black, plane with thickish thalline margin, at length convex and irregular and margin withdrawn. Spores cylindrical or ellipsoideo-cylindrical, sometimes rather curved, simple or uniseptate (or 7 mm. long, oo 35 thick). Paraphyses thick, inarticulate. Gel. hym. blue with iodine, thece intensely so. Granula gonima in sacs, two or three or more in each, not moniliform. Habitat on mosses, &c., on maritime calcareous rocks.

2. Collema quadriloculare. Wilson, spec. nov.

Thallus fusco-olivaceous or black, membranaceous, adhering, complicato-lobate, lobes thicker at margin and crisped. Apothecia

moderate, black or rufous black, crowded, plane or somewhat concave, with thalline margin entire. Spores cylindrical, rounded at each end, sometimes rounded at each end, sometimes rather curved, four-celled ('02-'03 mm. long, '003-'005 thick). Paraphyses fine, inarticulate. Granula gonima moniliform, but some gathered into fours in gelatinous sacs. Habitat on mosses on sub-alpine rocks.

3. Collema senecionis. Wilson, spec. nov.

Thallus fuscous green or olivaceous, sometimes deep sea-green and bluish-green beneath, membranaceous, thin, sometimes shining and sometimes granulate rugulose (2 to 3 in. diam.), rotundo-lobate; lobes ascending at margin, imbricate, undulate, crispate. Apothecia rufous or testaceo-rufous, plane or somewhat convex, moderate (1 mm. diam.), often crowded, thalline margin thin entire. Spores elongato-fusiform, straight or curved or twisted, 3 to 9 septate ('03 to '05 mm. long, '005 thick). Gel. hym. blue with iodine. Gran. gon. oblong or reniform (2 mm. long), or sub-globose (1 mm. diam.) Habitat on boughs and stems of Senecio Bedfordii, very rarely on other trees, prostanthera and pomaderis. While young the thallus is bright darkgreen, the centre stretched smooth, transparent, and shining, as though it were a thin film of green paint.

4. Collema atrum. Wilson, spec. nov.

Thallus black, small (to 1½ inch diam.) complicato-squamose, at the circumference lobate, thick, cartilaginous, granulato-corrugata. Apothecia black or obscurely rufous, or sometimes whitish (diameter 1 mm.), thalline margin whole. Spores ovate or fusiformi-ovate, acuminate at one or both ends. 3 to 4 loculate (1018–1026 mm. long, 1005–1006 mm. thick). Paraphyses slender, crowded. Thecæ clavate, coloured intense blue with iodine. Habitat on maritime calcareous rocks.

5. Collema leucocarpum. Taylor; var. nov. minus, Wilson. Much smaller and darker in both thallus and apothecia than the type. Habitat on trees by lake.

6. Leptogium olivaceum. Wilson, spec. nov.

Thallus olivaceous, paler beneath, membranaceous, rotundolobate, undulate, smooth. Apothecia rufous or fusco-rufous, plane with thin margin. Spores fusiform-ellipsoid ('013 mm. long, '004 thick), 3 to 5 septate with longitudinal divisions. Habitat among mosses on granitic rocks.

7. Leptogium olivaceum; var. isidiosum, Wilson.

Thallus plumbeo-cœrulescent, tinged here and there with olive, covered more or less with cæsious isidia. Sterile. Habitat with type.

8. Leptogium chloromelum. Sw.; var. nov. Victorianum, Wilson. Thallus like the type described by Nylander, but firmer in

texture, passim rufo-fuscous, old lobes fusco-furfuraceous, as though denuded of cortex. Apothecia similar to type, but with margin thinly plicate, or tumid, or granulate, or briefly laciniate. Spores ovoideo-fusiform, often acuminate at apices ('013-'017 mm. long, '005-'006 thick), usually 3, septate, with or without longitudinal division of central cells. Habitat on mossy trees and rocks.

. 9. Leptogium limbatum. Wilson, spec. nov.

Thallus plumbeous or cœruleo-plumbeous, passim rufo-fuscescent, membranaceo dilated, rotundo-lobate, undulate, circumference reflexed, sinuate, and for the most part adorned with a tumid, minutely squamose fringe, occasionally bullate, bullæ crowded with spermagones; concolorous beneath, albo-tomentose, but circumference broadly nude. Apothecia pallido-rufous, somewhat convex, large (4 mm. diam.), appressed, with squamose thalline margin. Habitat on back of trees in sub-alpine localities. Allied to *L. inflexum* (Nyl.), but thallus lobate and limbate, and the under surface concolorous and less tomentose.

10. Obryzum myriopus. Wilson, spec. nov.

Thallus cinerascenti-plumbeous or cœruleo-plumbeous, small (1 in. diam.), rotundo-lobate, deeply incised, lobes imbricate, margin slightly incurved, upper surface minutely and confusedly rugulose, under surface densely covered with woolly, often fasciculate rhizinæ, white or cœruleo-nigricant. Apothecia endocarpoid, showing externally depressed fuscescent tubercles (2 mm. diam.) scattered, here and there crowded. Spores, 8 in asco, ellipsoideo-fusiform (13 mm. long, 104 thick), amber-coloured with iodine. Paraphyses distinct. Granula gonima (105 long, 107 thick) binary, minutely granulated or mottled, moniliform or scattered one or two in a cell. Habitat among jungermannias, on bark of trees in shady forest. In Queensland, found by Mr. J. Shirley on rocks, but isidiose and sterile.

11. Myriangium dolichosporum. Wilson, spec. nov.

Thallus black, small (2-5 mm. broad, 2 mm. or more high), pulvinate, opaque or slightly shining, unequal. Apothecia often nearly covering the thallus and concolorous with it. Epithecium slightly rufescent. Disk plane or concave, attaining a breadth of 1 mm. Receptacle elevated or stipitate, stipe sometimes 1 mm. long, tapering downwards; thalline margin rounded. Thecæ spheroidal, scattered through the cellular substance of the apothecium. Spores 8, colourless, cylindrical, curved, narrowing at each end, and marked with minute guttæ down the longitudinal axis, '04 mm. long and '006 mm. broad. Habitat on twigs of Hymenanthera Banksii.

12. Sphinctrina microcephala. Nyl.; var. nov. tenella, Wilson. Thallus probably that of some pertussaria. Apothecia fuscous, shining, stipe long and slender (3 mm. high, 05 mm. thick).

Capitulum turbinato-globose (1 mm. diameter). Exciple pyrenoid. Spores (10 mm. long) simple, nigricant, fusiformi-globose or ellipsoid, like those figured by Nylander; epispore thick, with reddish tinge. Habitat on twigs of Hymenanthera Banksii.

13. Calicium pusiolum. Ach.; var. nov. niveum, Wilson.

Thallus snowy white, thick, effuse. Apothecium minute (·5 mm. high), stipe hyaline, upper part black or all fuscous or black, very slender; sometimes furcate. Capitulum hemispherico-lenticular, black, about ·25 mm. broad, sometimes divided into several lobes, or even separate capitula on divided stipe. Spores pale nigrescent, fusiformi-ellipsoid, simple (·004-·006 mm. long, ·002-·0025 mm. broad), flat, so as to seem almost baccillar when viewed on the side. Paries thick. Gel. hym. with iodine vinous yellow. Habitat on decaying bark of growing eucalyptus.

14. Calicium Victoriæ. C. Knight, spec. nov.

Thallus white or whitish, or cinerascent, more or less distinct, effuse. Apothecia wholly black ('5-1 mm. high). Capitulum turbinato-lentiform or hemispherico-lentiform (up to '25 mm. broad); stipe slender, about '1 mm. thick, thicker at base. Spores fuscous, fusiformi-ellipsoid, simple ('005-'008 mm. long, '002-'003 mm. broad). Paries somewhat thick, and showing a dark outline. Habitat on decaying decorticated eucalyptus.

15. Calicium contortum. Wilson, spec. nov.

Thallus whitish, very thin. Apothecia all black, smaller than C. Victoriæ; stipe contorted. Capitulum hemispherico-lenticular. Spores dilutely nigrescent (004 mm. long, 0014-002 mm. broad). Habitat on decorticated decaying eucalyptus.

16. Calicium parvulum. Wilson, spec. nov.

Thallus white, rather determinate, having the appearance of a thin coat of whitewash. Apothecia all black (4 mm. high). Capitulum lentiform (16 mm. diameter); stipe slender (55 mm. thick). Spores simple ellipsoid, dilutely nigrescent. Paries thin, very black. Habitat on decorticated decaying eucalyptus.

17. Calicium flavidum. Wilson, spec. nov.

Thallus yellow or sulphureous, smooth, nearly shining. Apothecia black, tinged with the thalline colour on the margin and sometimes downwards, robust, attaining 1 mm. in height and 5 mm. in thickness; stipe rather short, thickneed upwards. Capitulum globoso-turbinate. Sporal mass black, protruded. Spores fusco-nigrescent, ovoid or sub-fusiformi-ellipsoid, uniseptate (1006-101 mm. long, 1003-1004 mm. broad), the walls tinged red, the cells fuscescent, containing each one or two nigrescent locules. Habitat on wood of dead eucalyptus.

18. Calicium tricolor. Wilson, spec. nov. Thallus sulphureous leproso-granulose. Apothecia black, small,

to '75 mm. high; stipe '1 mm. thick. Capitulum turbinatoglobose ('2-'5 mm. broad), margin white. Spores fusiformiellipsoid, somewhat pointed at each end ('008-'012 mm. long, '003-'005 mm. broad), uniseptate, somewhat constricted at septum, fuscous with a fusco-nigrescent locule in each cell. Habitat on decaying decorticated eucalyptus. The apothecium is like that of C. curtum, but the spores are different in shape and colour, and size, and the thallus is altogether unlike.

19. Calicium deforme. Wilson, spec. nov.

Thallus cinerascent, thin, granulose. Apothecia black, deformed with thalline and other granules, 1 mm. high, or rather more. Capitulum turbinato-lentiform attaining a diameter of 5 mm., stipe '2 mm. thick. Sporal mass black, protruded, sometimes extending considerably on one side. Spores fusiformi-ellipsoid. nigrescent, '006-'008 mm. long, '0025-'004 mm. broad, uniseptate, septum generally rather indistinct. Habitat on decaying eucalyptus.

20. Calicium nigrum. Schær.; var. nov. minutum, C. Knight. Thallus obscurely cinereous or black, leprose. Apothecia short (.5 mm. high); stipes stout (.1-12 mm. thick). Capitulum turbinatolentiform, disk puinose, '3 mm. broad. Spores nigrescent ('0075 mm. long, '004 mm. broad), ellipsoid, uniseptate, constricted at middle, a locule in each cell. Habitat on old rails.

21. Calicium subtile. Pers.; var. nov. biloculare, Wilson.

Thallus whitish or cinerascent, thin. Apothecia all black ('8-1 mm. high). Capitulum lentiform or sub-turbinato lentiform (-3-4 mm. broad), stipe 'I mm. thick. Spores fuscescent or fusconigrescent, ellipsoid or sub-fusiformi-ellipsoid, bilocular or obsoletely bilocular or simple, no visible septum (.005-.007 mm. long, '002-'003 mm. broad). Paries somewhat thick. Habitat on decaying eucalyptus.

22. Calicium gracillimum. Wilson, spec. nov.
Thallus a whitish spot. Apothecia all black (8 mm. high). Stipe very slender, about '06 mm. thick. Capitulum minute ('1 mm. broad), turbinato-lentiform. Spores ellipsoid or fusiformiellipsoid, uniseptate (about '001-'002 mm. long, '0006-'001 mm. broad). Habitat on decaying decorticated musk-tree.

23. Calicium roseo-albidum. Wilson, spec. nov.

Thallus roseo-albescent, thick, minutely cancellate, chrysogonimic. Apothecia minute, wholly black. Capitulum lenticular (2 mm. broad). Stipe slender (7 mm. high, 06 broad.) Spores nigrescent, oblong or oblongo-ellipsoid ('005 mm. or more in length, '002-'003 mm. broad), apices roundish, uniseptate. Habitat on decaying decorticated eucalyptus, a great portion of which it covers with a light rosy tint. When the thallus is bruised it

it becomes a deep yellow from exposure of the chrysogonimic layer.

24. Coniocybe rhodocephala. Wilson, spec. nov.

Thallus scanty, obscurely virescent, leprose, or none. Apothecia on stipe fuscous or black pruinose (to 2 mm. high, 2 mm. thick), sometimes forked, or two partly coalescent. Capitulum globose, pale rose or pale flesh, rarely whitish. Spores very numerous, massed together, colourless, ellipsoid or oblongo-ellipsoid, 003-006 mm. long, '0015 mm. broad, bilocular or placodine or uniseptate. Paries thick. Paraphyses numerous, distinct. Habitat on dead bark of decaying trees in thick scrub. This species is remarkable for the form of its spores. All the species of this genus hitherto described have spherical spores without septa.

25. Coniocybe citriocephela. Wilson, spec. nov.

Thallus white, thin. Apothecia minute. Stipe black, slender, to '1 mm. high, '06 mm. thick. Capitulum greenish yellow, turbinate, at length globose, to 2 mm. diameter. When denuded of the sporal mass it is fuscous and turbinate. Spores colourless or dilutely yellow, briefly oblongo-ellipsoid or spheroidal ('02-04 mm. long, '02-'03 mm. thick). Habitat on decaying tree and on dead bark of tree near permanent water.

26. Trachylia lecanorina. Wilson, spec. nov.

Thallus cinerascent, verruculose, passim verruco sorediate. Apothecia to 5 mm. wide, crowded, elevated in thalline verrucæ, sporal mass abundant, often much protruded, and conjoining with that from neighbouring apothecia. Spores fusco nigricant or nigrescent or nearly colourless; ellipsoid, uniseptate ('01-'02 mm. long, '006-'01 mm. broad). Gonidia numerous and of moderate size. Habitat on old eucalyptus rails and posts. This plant bears at first sight a great resemblance to *Lecanora atra*, for a rubbed specimen of which it was at first mistaken. It is more lecanoroid than the rest of the genus.

27. Trachylia viridilocularis. Wilson, spec. nov.

Thallus obscurely cinerascent. Apothecia wholly black, slightly elevated, 3 mm. high, 3 mm. broad. Sporal mass abundant. Spores nigricant or virescenti-nigricant, or when immature fuscous, irregularly illipsoid, uniseptate, one or occasionally two locules in each cell, locule often bottle-green. Gonidia round or ellipsoid, with or without paries (1002-101 mm. diam.) Habitat on old sawn eucalyptus rails, associated with Calicium nigrum, var. minutum, the Calicium on the more decayed horizontal face of the squared rail and the Trachylia on the perpendicular face.

28. Trachylia emergens. Wilson, spec. nov.

Thallus white or whitish or cinerascent, thin, smooth, almost shining. Apothecia, when young, apparently emerging from

between the fibres of the timber, scarcely ever rising above the thallus, breadth up to 5 mm. Sporal mass black. Spores fusco-nigricant, conglutinated in glomerules, ellipsoid, about oo5 mm. long, oo3 mm. mm. broad, but very various in size, uniseptate, with locule in each cell. Gonidia '02 mm., oblongospherical. Habitat on decaying eucalyptus rails in sub-alpine localities. Found also on Mt. Lofty, S.A.

29. Trachylia exigna. Wilson, spec. nov.

Thallus cinerascent, effuse. Apothecia partly sunk in the thallus, small, very slightly elevated, disk plane or convex. Spores fusiformi-ellipsoid, nigrescent, uniseptate, about '008 mm. long, '003 mm. broad. Habitat on old eucalyptus rails.

30. Trachylia Victoriana. Wilson, spec. nov. Thallus cinerascent, thin, effuse. Apothecia typically sessile, often briefly stipitate, black, disk often sulphureo-pruinose, breadth to 4 mm. Spores fuscous, oblongo-ellipsoid ('005-'006 mm.) or nigricant, ellipsoid, narrower at apices and rather smaller, uniseptate, with paler loculi in each cell. The fuscous colour is owing, as usual, to a coat, which comes off under rough usage, leaving the spore nigricant. I find it difficult to decide whether this is a Trachylia or a Calicium (to be called percurtum), or whether these are both constantly associated, with similar spores. Very common on old eucalyptus rails in many parts of Victoria.

31. Bœomyces fusco-carnea. Wilson, spec. nov. Thallus 2 to 3 in. in diameter, pallid, grannulose, grannules sometimes depressed. Apothecia fusco-carneous, pruinose (1-2 mm. broad), convex, margined by the hypothecium; stipes white, nude; short or subsessile, I mm. or less in height. Thallus and apothecia when touched with hydrate of potash shew yellow and then deep blood-red, which is permanent. Habitat on clay. This species is allied to B. Rufus.

32. Cladonia cariosa. Flk.; var. diffissa, Wilson

Thallus of squamæ light green, minute, crenate, curled up, displaying the white under surface. Podetia squamulose, split at the apex into several branches, which, with the rest of the podetia lose the cortex here and there and show the filamentous substance underneath costate and eroso-cancellato. Sometimes the whole podetium is split up into a sort of network. cium of paler or darker rufous, on each branch of podetium. Habitat on earth or decaying tree stumps. Allied, perhaps, too closely to C. cariosa, of which it may possibly be a form. The chemical reaction is uncertain, generally K + C - ...

33. Cladonia hastata. Wilson, spec. nov.

Squamæ at foot of podetia small, evanescent. Podetia brown, verruculose, smooth, somewhat shining, sparingly divided at base, rarely above, slender, fragile, erect, scarcely curved, rising to

3 in. in height and coming to a sharp point at the apex. Apothecia unknown. Found in company with *C. fragillima* (Krplhb.), of which it may be a form, as that seems to be allied to *C. pungens*.

34. Phyllis melacarpa. Wilson, gen. et spec. nov.

Thallus minute (2-3 mm. long, '2 broad), cinereous, but green when fresh, white below, laciniato-squamose, convex on both surfaces, irregularly multifid, the apices of the lower laciniæ crenate, divided, recurved, the ultimate lacinæ more or less terete. Apothecia cephaloid, black, somewhat smooth and shining, regular and hemispherical or tubercularly difformed (attaining a diameter of fully 1 mm.), terminal on the lower thalline laciniæ, which then form short, finely fistulose podetia. Spores 8, in asco, colourless, simple, ovato-ellipsoid ('006-'008 mm. long, '004-'005 thick), containing often one to three globules. Paraphyses indistinct, fuscescent, apices fuscous (.004-'005 mm. thick). Gel. hym. blue with iodine. (Spermatia bacillar, inreassate at one apex)? Habitat on tree trunks and decaying logs in sub-alpine localities.

The squame of the thallus are generally very closely imbricated, showing scarcely more than the terete apices and the round, black apothecia, half-buried among them. The thallus is composed of laxly-interwoven filaments, both simple and ramose (002-005 mm. thick), with gonidia light green, spherical or oblong (005-017 mm. diam.), gathered into groups close to the upper surface

of the thallus.

This plant is allied to the Cladonias by the texture and general appearance of the thallus, the cephaloid form of the apothecia, and the form and colour of the spores, but it is separated from that genus by the double convexity of the thallus, becoming at the apices almost cylindrical, together with the colour and situation of the apothecia and the character of the paraphyses; which compel the formation of a new genus, which I venture to call *Phyllis*, from the leafy nature of the plant, by which it stands alone among the Cladodei. The distinguishing marks of the new genus are: Thallus squamulose, apothecia black, subterminal, paraphyses indistinct. Its place is between *Cladina* and *Pycnothelia* in Nylander's arrangement.

35. Pilophoron conglomeratum. Wilson, spec. nov.

Thallus olivaceous—green when fresh—effuse isidioso-granulate; podetia sub-cylindrical, longitudinally costate or lacunose, verrucoso granulate, passim isidiose ('20 mm. high, 1'5 mm. thick), simple or divided into two or four branches at apex. Apothecia fuscousblack, conglomerate ('4 mm. diam.), spores ellipsoideo-fusiform, colourless, simple ('01 mm. long, '003 thick). Hypothecium fuscous. Paraphyses distinct, conglutinated, fuscescent, apices fuscous. Gel. hym. with iodine intensely blue. Habitat on mossy trunks of dead trees in sub-alpine localities.

36. Ramalina brevis. Wilson spec. nov. Thallus pallido-glaucescent, opaque, applanate, short (to 1 ½ in. long and 2 in. broad), lacerato divided, sometimes lacerato complicate. Apothecia flavo-pallid, large (to 10 mm diam), receptacle podicellate, margin more or less incurved. Sometimes the thallus is wholly covered on one side with apothecia. The whole appear ance of the typical plant readily distinguishes this species from all others of the genus.

37. Ramalina unilateralis. Wilson, spec. nov.

Thallus small (about 8 mm. long), irregularly multifid and entangled (base 2 mm. broad), apices finely divided, curled up and displaying the under surface white, chiefly eroded and sorediate, upper surface sulphureous, cartilaginous, undulate, smooth, nearly shining, K-C-. Apothecia not seen. Habitat on small twigs of Bursaria spinosa near sea.

38. *Parmelia sub-carulea*. Wilson, spec. nov. Thallus bluish-white margined with black line, lobato-laciniate, lobes rotundo-crenate, centre and nearly all upper surface covered with a dark isidium, under surface smooth black, but pale fuscous near margin. Med. K yellow, then very deep blood-red. Apothecia fusco-rufous, small, plane or irregularly concave, thalline margin thin. Habitat on rocks-granite, sandstone, or basalt.

39. Parmelia albata. Wilson, spec. nov.

Thallus white, with a slight coerulean tinge, opaque, more or less broadly laciniato-lobate, highly undulate and imbricate, with patches of soredia here and there, especially on undulations. Under surface white, covered with concolorons or blue tomentose rhizinæ. Med. K vellow C-. Apothecia not seen. on mossy rocks.

40. Parmelia colpodes. Ach.; var. sphæroidispora, Wilson.

Differs from the type as described in Nylander's Syn. Meth. only by the sphæroidal form of the spores, and by their size. Nylander gives "long circa '0025, cras. circa '001 mm." This variety is about '005 mm. long and '004 thick.

41. Theloschistes velifer. Wilson, spec. nov.

Thallus minute (half an inch or less), social, yellow or in the sun orange, narrowly everniæform, laciniæ convex, beneath white, subcanaliculate, margined by concolorous ciliæ; apices lobate, sub-ascending, elongate, much broadened and inflated, the lower cortex and the medulla often absent, exposing the green or yellow gonidia. Apothecia orange-red, moderate, (diam. 1 to 2 mm.), at length sub-cephaloid, stipitate, rising 1 to 2 m.m. from the base of the apicular lobe. Spores uncoloured, ellipsoid ('008-'01 mm. long), placodine. Habitat on bark of trees and bushes near streams and in gardens. It prefers the furcations of the small twigs of Hymenanthera Banksii, and often covers the whole side of a bush. The fruit is rather rare.